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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/542,549

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David Tibor Julian Liley

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EXAMINER

NATNITHITHADHA, NAVIN

ART UNIT

PAPER NUMBER

3735

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/542,549	<b>Applicant(s)</b> LILEY, DAVID TIBOR JULIAN	
	<b>Examiner</b> NAVIN NATNITHITHADHA	<b>Art Unit</b> 3735	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 1, 2 and 18-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>20050819; 20090211</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. According to the Amendment, filed 26 January 2010, the status of the claims is as follows:

Claims 3, 4, 7, 8, 12, 15, 17, and 22 are as originally filed;

Claims 5, 6, 9-11, 13, 14, and 16 are previously presented; and

Claims 1, 2, 18-21, and 23-26 are withdrawn.

2. In the Amendment, filed 26 January 2010, Applicant identified claim 22 as "Original". However, claim 22 is not part of the elected Group II claims. It appears the identification was in error, and the claim should be identified as "Withdrawn".

### ***Election/Restrictions***

3. Claims 1, 2, 18-21, and 23-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 26 February 2010.

Applicant's election with traverse of Group II, claims 3-17 and 26, in the reply filed on 26 February 2010 is acknowledged. The traversal is on the ground(s) that "the claims of Group I represent a broad combination directed to a method and system for assessing brain state by analysing mammalian brain electroencephalogram (EEG) recordings using an eighth order autoregressive and fifth order moving average discrete

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time equation, and the claims of Group II represent a specific subcombination of Group I, as the Group II claims define specific eighth order autoregressive and fifth order moving average equations and method steps to achieve the common purpose of assessing brain state by analysing mammalian brain electroencephalogram (EEG) recordings as provided by the claims of Group I". See Applicant's Remarks, pp. 18-19, 26 February 2010. This is found persuasive. Thus, the Group I, claims 1, 2, 23, and 24, and Group II, claims 3-17 and 26, will be considered elected, and claims 18-22 and 25 are withdrawn from consideration.

3. This application contains claims 18-22 and 25 are drawn to an invention nonelected with traverse filed on 26 February 2010. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Priority***

4. Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon an application filed in AU on 20 January 2003.

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Objections***

5. Claims 24 and 26 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

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Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 3-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant has not defined the variables in the equation recited in claims 3, 4, and

7. Claims 5 and 8-17 are rejected due to their dependencies to claims 3, 4, and 7.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-17, 23, 24, and 26 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim(s) 1-17, 23, 24, and 26 are rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter because these claims are method or process claims that do not transform underlying subject matter (such as an article or materials) to a different state or thing, nor are they tied to a particular machine. *See Diamond v. Diehr*, 450

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U.S. 175, 184 (1981) (quoting *Benson*, 409 U.S. at 70); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978) (citing *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876)). See also *In re Bilski*, 545 F.3d 943, 88 USPQ2d 1385 (Fed. Cir. 2008), where the Fed. Cir. held that method claims must pass the "machine-or-transformation test" in order to be eligible for patent protection under 35 USC 101.

Examiner suggest inserting language directed to a particular machine, such as a a "central processing unit" (see page 4 of Applicant's specification) that imposes a meaningful limit on the claim's scope, i.e. a machine that involve more than a field of use limitation and involve more than insignificant extra-solution activity (for example, a conventional EEG electrode does involve more than insignificant extra-solution activity because it performs mere data gathering).

9. Claims 24 and 26 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As to claims 24 and 26, the claimed subject matter(s) is directed to neither a "process" nor a "machine", but rather overlaps two different statutory classes of invention. See MPEP 2173.05(p) II.

### ***Double Patenting***

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

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A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

10. Claim 23 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 24. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1, 23, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Smyth, U.S. Patent No. 5,687,291 A ("Smyth").

**As to Claims 1, 23, and 24**, Smyth teaches the following:

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A method for, or a system having means for, assessing brain state (see col. 3, ll. 40-64) by analysing mammalian brain electroencephalogram (EEG) recordings using an eighth order autoregressive and fifth order moving average discrete time model equation (see col. 8, ll. 33-56).

***Allowable Subject Matter***

12. Claims 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if rewritten to overcome the rejection(s) under 35 U.S.C. 101 and 35 U.S.C. 112, second paragraph, set forth in this Office Action.

13. Claims 3-17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 101 and 35 U.S.C. 112, second paragraph, set forth in this Office Action.

14. The following is a statement of reasons for the indication of allowable subject matter:

**As to Claim 2**, the prior art of record does not teach the method of claim of claim 1, including the combination of the following steps: taking a z-transform for said eighth order autoregressive and fifth order moving average discrete time equation to obtain a z-domain equation, determining poles and zeroes in the solution of the z-domain equation; and plotting the poles onto the complex plane.

**As to Claims 3-17**, the prior art of record does not teach the method of claim of claims 3, 4, and 7, including the combination of the following steps: approximating each



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digitized time frame by the first equation, solving the first equation to determine coefficients  $a_1$  to  $a_8$  and  $b_0$  to  $b_5$ ; performing a z-transform on the first equation to obtain a second, z-domain equation; substituting each of the values of the coefficients into the z-domain equation; solving  $A(z) = 0$  for  $z$  in the second equation to determine the poles; plotting the poles in the complex plane.

### ***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The other patents cited in the PTO-892 teach subject matter related to the Applicant's claims. The Examiner suggests reviewing these patents before responding to the present Office Action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NAVIN NATNITHITHADHA whose telephone number is (571)272-4732. The examiner can normally be reached on Monday-Friday, 9:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor, II can be reached on (571) 272-4730. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Navin Natnithithadha/  
Patent Examiner, Art Unit 3735  
06/03/2010